

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000488**Date Inspected:** 21-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 2330**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Lu Jian Ping & Li Wen Shong			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>

**Bridge No:** 34-0006**Component:** Caltrans Mock-Up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M and 114M, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

<b>Item</b>	<b>Description</b>	<b>WBS</b>	<b>Dwg No.</b>	<b>Status</b>
1	Skin Plate D (upper)	NA	NA	Work In Progress
	Mock-Up 114M, Skin Plate D (upper section): Caltrans QA Inspector observed flux cored arc welding (FCAW) in progress at stiffener plate, mp1004 to skin plate, partial joint penetration (PJP), double bevel T-joint. The weld numbers are identified as weld 6 and 7. The welders are observed welding fill pass weld in the horizontal position. Caltrans QA Inspector observed welders chipping and wire brushing during the interpass weld cleaning. The welders are identified as Mr. Cao Henjin, welder stamp 66420 and Mr. Wen Yanyan, welder stamp 066734. The welders are using welding procedure specification WPS-B-T-2332-TC-P5-F, Revision 0. Caltrans QA Inspector observed ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Lu Jian Ping and Bureau Veritas inspectors, Mr. Hua Li Wei and Mr. Li Wen shong monitoring welding activities at the workstation. Caltrans QA Inspector measured current welding parameters at approximately 300 amps, 30 volts and 300 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 110 Celsius (230) degree Fahrenheit) but less than 232 Celsius (450) degrees Fahrenheit) during maximum interpass temperature verification. FCAW consumable is verified and identified as Supercored 71H, classification E71T-1, diameter 1.4 mm (.055 inches).			
2	Skin Plate D (lower)	NA	NA	ZPMC MT

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Mock-Up 114M, Skin Plate D (lower section): Caltrans QA Inspector observed submerged arc welding (SAW) in progress at skin plate splice weld number 1, piecemark mp1016 to MA110. The welder operator is observed welding a partial joint penetration (PJP) root pass weld in the flat position. Welder is identified as Mr. Han Changhou. The welder is using welding procedure specification WPS-B-T-2321-B-P3-S-1, Revision 1. Caltrans QA Inspector measured current welding parameters at approximately 550 amps, 31.5 volts and travel speed, 460 millimeters per minute (mm/min). Preheat and interpass temperatures were verified during welding activities. Preheat temperature prior to the start of welding measures more than 110 degrees Celsius (230 degree Fahrenheit) but less than 232 degrees Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. SAW consumables were verified and identified as JW-3, classification EM12K, diameter 4.8 mm (.189 inches) electrode and JF-B Flux, classification F7A2. Caltrans QA Inspector witnessed ZPMC QC non-destructive testing technician, Mr. Cai Xin xin perform magnetic particle test (MT) and Visual Test (VT) inspection of the root pass weld. The MT test appeared to be in general conformance with AWS D1.5 2002 requirements and no relevant indications observed. Caltrans QA Inspector performed MT and VT inspection of the root pass weld. See Caltrans Magnetic Particle Test Report, TL6028, generated on this date for additional information. The following digital pictures illustrate ZPMC MT in progress.



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|---|----------------------------|----|----|---------|
| 3 | Skin Plate E (upper/lower) | NA | NA | ZPMC MT |
|---|----------------------------|----|----|---------|
- Mock-Up 114M, Skin Plate E (upper & lower section): Caltrans QA Inspector witnessed ZPMC QC nondestructive (NDT) technician, Mr. Cai Xin Xin perform magnetic particle test (MT) and Visual Test (VT) inspection of the partial joint penetration root pass tack-welds, weld number 1, 2, 4 & 7, upper assembly section, stiffener plate to skin plate and the lower assembly, root pass weld, identified as weld 7 and 8. ZPMC MT and VT coverage consisted of one-hundred percent of the tack-welds and root pass welds. MT test appeared to be in general conformance with AWS D1.5 2002 requirements and no relevant indications were observed. Caltrans QA Inspector performed MT and VT inspection at the locations, as mentioned above. See Caltrans Magnetic Particle Test Report, TL6028, generated on this date for additional information. The following digital picture illustrate ZPMC MT in progress.

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### Summary of Conversations:

As identified within the contents of this report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Hasler,Mike	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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